

CLAIMS

1. Valve comprising a body inside which a needle capable of resting in a sealed manner against a seat fixedly joined to the body is mobile, the needle being coupled magnetically, through a sealed and non-magnetic partition, to an actuating device equipped with several magnets between which magnetic bodies are interposed, characterized in that the needle (3; 103; 203; 303; 503; 603) does not have magnets.

2. Valve according to claim 1, characterized in that the needle (3; 103; 203; 303; 503; 603) is equipped with ribs (36; 136; 236; 336; 536) formed from a magnetic material.

3. Valve according to claim 2, characterized in that the thickness ( $e_{36}$ ) of the ribs (36; 136; 236; 336; 536) is substantially equal to the thickness ( $e_{53}$ ) of the bodies (53; 153; 253; 353; 553).

4. Valve according to either claim 2 or claim 3, characterized in that the relative spacing ( $d$ ) of the ribs (36; 136; 236; 336; 536) is substantially equal to, or corresponds substantially to, a multiple or a sub-multiple of the relative spacing ( $l_{52}$ ) of the bodies (35; 153; 253; 353; 553).

5. Valve according to any one of claims 2 to 4, characterized in that the ribs (36; 136; 236; 336; 536) are unitary with the body (2; 102; 202; 302; 502) of the needle (3; 103; 203; 503; 603).

6. Valve according to any one of claims 2 to 5, characterized in that the volume between two adjacent ribs

(36; 136; 236; 336; 536) is packed with a non-magnetic filling material (37; 137).

7. Valve according to any one of claims 2 to 6, characterized in that the partition (104; 304; 604) is flat overall and in that the ribs (136; 336) and the bodies (153; 353) are provided with means (136c, 153c) for guiding the needle (103) in translation.

8. Valve according to claim 7, characterized in that the guide means include magnetic field concentration regions (L) formed opposite one another, on the needle (103) and on the device (105), respectively, by the creation of cavities (136c, 153c) in the opposing surfaces of the ribs (136) and the bodies (153).

9. Valve according to any one of the preceding claims, characterized in that the needle (3; 103; 203; 303; 503; 603) is covered with a layer of anti-corrosion material.

10. Valve according to any one of the preceding claims, characterized in that the movements of the actuating device (5; 105; 205; 305) are controlled pneumatically ( $F_2$ ).

11. Valve according to any one of the preceding claims, characterized in that the movements of the actuating device (505; 605) are controlled mechanically ( $R$ ,  $F_3$ ).

12. Valve according to any one of the preceding claims, characterized in that the sealed partition (4; 204; 504) is cylindrical, the needle (3; 203; 503) being located inside the partition while the actuating device (5; 205; 505) is arranged around the partition.

13. Valve according to any one of the preceding claims, characterized in that an element (8; 508) coupled magnetically to the actuating device (5; 505) is located outside the body (2; 502) and is mobile between two positions in which it indicates the open state and the closed state, respectively, of the valve (1; 501).

14. Valve according to claim 13, characterized in that the body (2; 502) is provided with two marks (81, 82) corresponding to the closed state and the open state, respectively, of the valve (1; 501), while the element (8; 508) is capable of masking selectively one of the marks while leaving the other mark visible, or vice versa, as a function of its position controlled by the movements of the actuating device (5; 505).

15. Valve according to either claim 13 or claim 14, characterized in that a sensor is capable of detecting the movements of the element (8; 508) and of supplying to a monitoring system a signal representative of the open or closed state of the valve.

16. Installation for projecting coating product, comprising at least one projector (P) and at least one source of coating product, characterized in that it comprises at least one valve (1; 101; 201; 301; 401; 501; 601; 701; 801) according to any one of the preceding claims, located in the line (1001) for supplying coating product or cleaning product to the discharge opening (O) of the projector.

17. Installation according to claim 16, characterized in that the valve (201; 301) is integrated in the projector (P).